XF-31
High Power Stereo Projection Emitter
Users Guide Rev A - October 2009

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XF-31 *High Power Stereo Projection Emitter*

Thank you for your purchase of the **XForce3D XF-31** High Power Stereo Projection Emitter. The XF-31 system is a professional grade, long range infrared controller designed especially for **Xforce3D** by **3D Flight Simulation Company**. The XF-31 system is designed for use in commercial 3D theater, university auditorium and convention hall venues. Years of experience went into the design of these powerful emitters. Each high performance IR-LED is driven by its own discrete power transistor. The XF-31 system is also designed for great system flexibility and almost unlimited expansion.

The XF-31 is the only professional grade emitter system for use with our deluxe **XForce3D** LCD shutter-glasses. The XF-31 system can also be used with external power for addition of multiple LED Arrays. The unit's high power Infrared control beam will operate our Xforce3D shutter-glasses to a range of at least 65 feet with a 3db beam width of 60 degrees. (Custom built units with 120 degree beam width are also available.) Techniques are available to insure rock solid IR control for the entire audience.

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System Requirements

The XF-31 Emitter requires a VESA standard stereoscopic sync source. Most stereoscopic video systems furnish this signal, including:

- 3D-Ready high definition televisions
- Nvidia based "Quadro" cards, series 3500 and above
- VGA stereoscopic video adapters for PC's (aka: "PC Dongle")
- Professional Theater 3D video servers

The VESA source is provided by a 3 pin miniDIN socket as shown here.
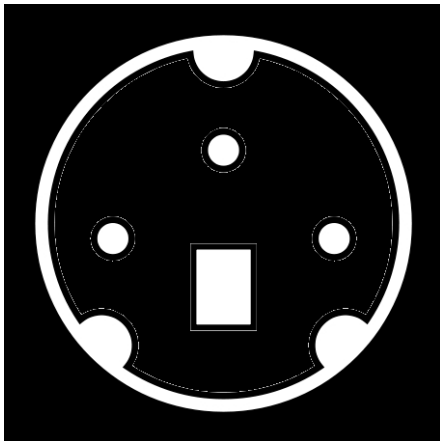
3 pin miniDIN
VESA sync socket

PC Dongle with 3-pin miniDIN
3D-Sync socket

Further information about the 3D sync source can be found in the ***Video Electronics Standards Association*** document – **"Connector and Signal Standards for Stereoscopic Display Hardware"**, VESA standard number VESA-1997-11.

Wireless LCD Shutterglasses
The XF-31 Emitter is designed for the Xforce3D shutter-glasses. The XF-31 will not operate 3D glasses using differing IR signals.

External Power
Your system's VESA miniDIN port should provide enough power for XF-31 Emitter. Some non-standard 3D miniDIN ports, however, do not provide enough power for XF-31. Additionally, external power is required when adding additional LED arrays. External power adapters are available at XForce3D.   Please refer to page 7 for use of the optional external power feature.
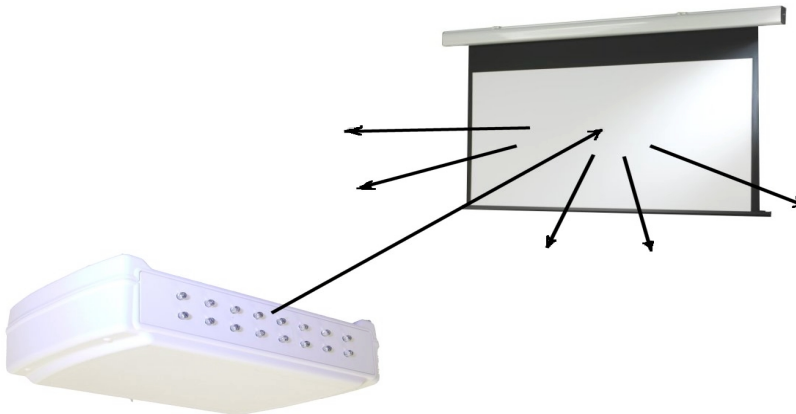
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Theater Layouts

The XF-31 Emitter may be used in two basic configurations: ***Direct*** and ***Reflective*** modes. For the Direct Mode the emitter should be placed near the top of the theater's projection screen or large screen HDTV monitor. Extension cables may be needed to place the emitter in the optimum position (available at XForce3D). The infrared (IR) control beam will be strongest for the center seats in the audience area. The IR beam will be weaker for seats located at increasing viewing angles. Additional add-on emitter arrays may be installed to increase coverage as needed.

1/2 power

30 degrees

30 degrees

Maximum range (65+)

1/2 power
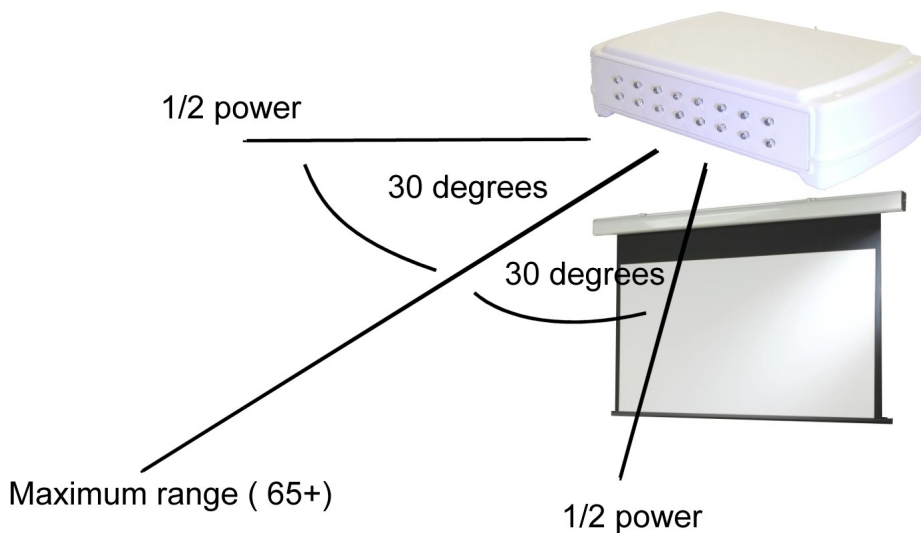
The XF-31 has a 60 degree, 3 dB beam width as shown at left. Custom built models are available with a wider, 120 degree beam width.

Alternatively the XF-31 Emitter may be placed to bounce the IR beam off the projection screen as illustrated. In this Reflective mode all viewing angles will receive nearly equal IR beam strength but the range is reduced significantly (depending on the screen's reflective properties). Additional add-on emitters may be necessary to provide sufficient range.

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OPERATION
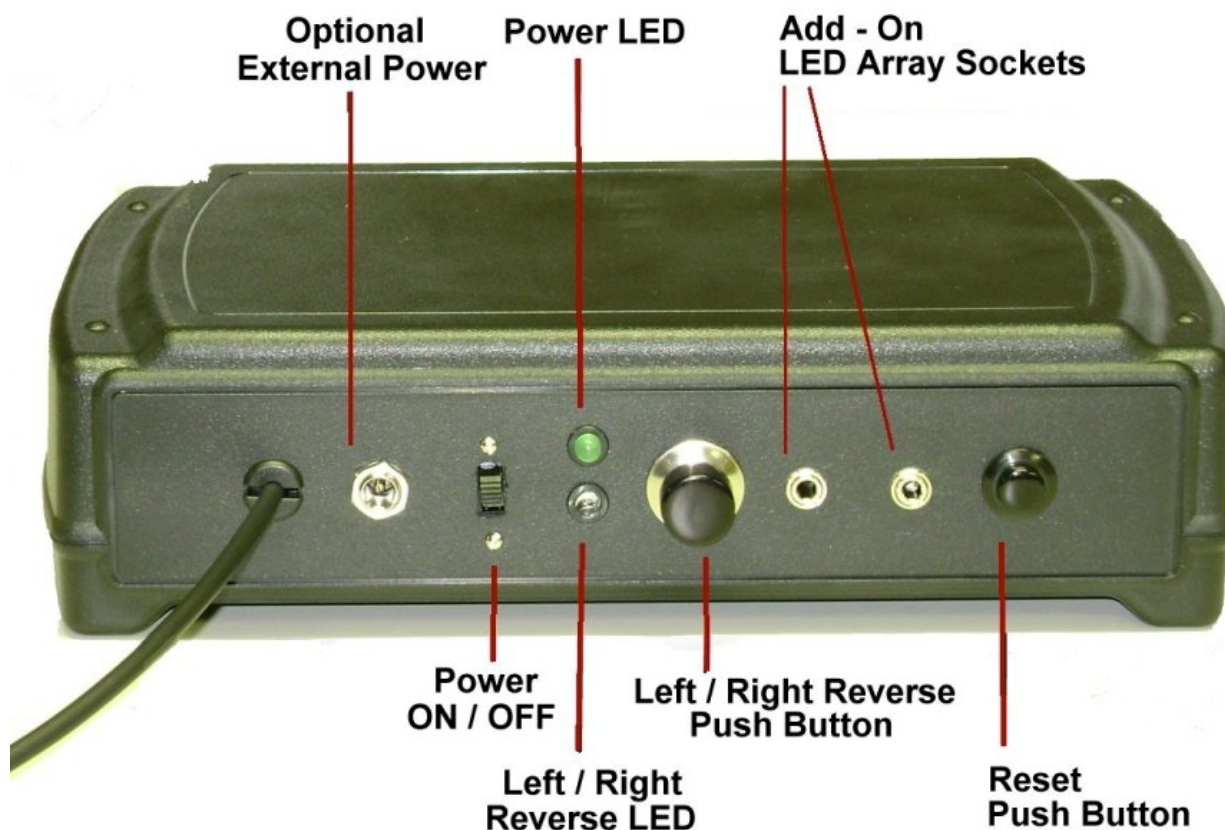
All controls for the XF-31 Emitter are located at the rear control panel. It is recommended that you turn the Power Switch to the OFF position when making or changing cable connections. When the Power ON / OFF switch is turned to the ON position the green Power LED illuminates. When power is turned on there is a 3 second power on delay before the XF-31 infrared control beam is engaged. The IR beam may lock-up if cable changes are made while the XF-31 is powered up. In event of lock-up press the RESET push-button. A three second delay will take place before the beam activates after pressing RESET.

Some projection 3D systems may occasionally produce reversed Left Eye / Right Eye parallax that causes inverted near – far depth perception. If the 3D depth seems "not quite right" press the **LEFT / RIGHT Reverse push-button** to reverse the left/right frame sync. The red **Left/Right Reverse LED** will illuminate when the XF-31 L/R Reverse function is active.

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ADD-ON LED Arrays

Additional Add-On LED Arrays may be installed for increased IR beam coverage for large 3D theaters. The XF-31 system provides for nearly unlimited expandability. Additional LED Arrays may be stacked or they may be placed throughout the theater.

The XF-31 Emitter provided two sockets for add-on LED Arrays.   Each add-on LED Array also provides a socket for additional connections. In this manner arrays may be "daisy chained" for widely dispersed theater placement.

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ADD-ON LED Arrays and EXTERNAL POWER

An external power adapter is necessary for each add-on LED array. Add-on arrays and external power adapters for the XF-31 system are available at XFORCE3D. Power sockets on the XF-31 emitters use 2.1mm power plugs with center negative polarity. The system uses 6 VDC. Regulated power adapters with 500 mA or greater capacity are recommended.

POS   **+**   **NEG**   **−**

6V DC
CENTER NEGATIVE